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**RASPBERRY PI**

The Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse.

The Raspberry Pi is designed for educational purpose to improve programming skills and hardware programming.

The Raspberry Pi is slower than the laptop or desktop and it is totally in the Linux operating system.

They are categorized by combination of model name and generation. The model names include A, A+, B, B+, Zero and Compute Module.

Each model is differentiated by available connectors and size of the main board. Each generation is mainly differentiated by the chip performance.

The latest model of Raspberry Pi is Raspberry Pi 3+ Model B+.

Raspberry Pi 3+ Model B+ Hardware:

* 1.4 GHz 64 –bit quad-core ARM Cortex-A53, 1GB RAM
* 40 General purpose input and output pins
* 4 USB ports and Combined 3.5mm audio jack
* Micro SD card slot and Camera interface
* Bluetooth 4.2/BLE
* Integrated Wi-Fi
* Power over Ethernet

Raspberry Pi 3+ Model B+ vs Arduino :

* Raspberry Pi processor is faster than Arduino processor.
* But OS and other things in Raspberry Pi slows things down. Because OS has a big block of code that has to be executed.
* Raspberry Pi is voltage sensitive.
* Arduino are not sensitive to anything.
* The operating system in Raspberry Pi provides library functions for drives that are connected to Raspberry Pi. Arduino can’t do that.

Operating System benefits :

* Operating System provides user interface.
* It allows user to give commands to the computer and do basic things, without writing any code.
* It allows user to interact with machines without writing any code.
* Linux OS provides two types of user interfaces. They are Text based interface and Graphic interface.
* Text based interface: It allows user to type the commands in the prompt and when enter is pressed, it executes the whatever the commands says right.
* Graphic user interface: GUIs provides users with immediate, visual feedback about the effect of each action. GUI allows multiple programs and/or instances to be displayed.
* It allows user to type commands directly into text based interface and use point click interface in graphics.
* OS allows user to run multiple programs at same time.

Raspberry Pi has network connectivity, computational intelligence and can interface directly with sensors/actuators via pins which makes it as an Internet of Things ( IoT ) device.

Overclocking:

* Overclocking refers to increase the clock frequency of the device , beyond the recommended frequency.
* Overclocking may also refers to increasing in the internal voltage levels to increase speeds.
* It speed up the execution.
* It causes to increase temperature in the devices.